

SkyMorph: A Three Dimensional Sky Archive

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SkyMorph is an archive of visible images of the sky and information associated with these images. The archive covers much of the sky but its salient feature is that each area of the sky is re-observed several times at different timescales allowing the possibility of detecting celestial variability either in the positions of objects - asteroids, comets, high-proper motion stars; or in the intensity of objects such as novae, supernovae, or bursters. SkyMorph is accessible through the WorldWideWeb at <http://skys.gsfc.nasa.gov/skymorph/obs.html> or at <http://starlet.jpl.nasa.gov/skymorph/obs.html>. As this is written the archive consists of 31 nights of data, or 12000 images, most of them 1.6 x 1.6 degrees on a side. The images come from the Near-Earth Asteroid Tracking (NEAT) program and are acquired with a 4096x4096 CCD camera mounted on a 1-m telescope on Haleakala Crater, Hawaii. NEAT started observing in December 1995 and continues to observe every month for six nights. The total number of nights of observations is now 174. Prior nights are being added to the archive at a rate of about 1 night/day. The digital information from each field includes the Right Ascension and Declination positions of all detected objects, their intensities, and eventually the time behavior of these quantities. Current display capabilities include the catalog of images on the sky, multiple observations of the same field, RGB overlay of fields that show stationary objects in white and moving objects in color, and the object information. SkyMorph is sponsored by NASA Code SR's Applied Information System Research program